ENERGY STAR Qualified Homes Codes & Standards Information

Insulation Requirements for the National Builder Option Package

The National Builder Option Package requires that the insulation levels of a home meet or exceed Sections N1102.1 and N1102.2 of the 2004 IRC. For example, compliance may be determined by meeting the prescriptive insulation requirements listed by component below. Compliance may also be determined using U-factor alternatives or a total UA alternative as defined in Section N1102.1.2 and Section N1102.1.3. In all cases, insulation shall be inspected to Grade I installation as defined in the RESNET Standards by a RESNET-certified rater. Note that the fenestration requirements of the 2004 IRC do not apply to the fenestration requirements of the National Builder Option Package.

Climate Zone	Ceiling R-Value	Wood Frame Wall R-Value	Floor R-Value	Basement Wall R-Value	Slab R-Value & Depth	Crawl Space R-Value
1	30	13	13	0	0	0
2	30	13	13	0	0	0
3	30	13	19	0	0	5/13
4 except Marine	38	13	19	10/13	10, 2 ft.	10/13
5 and Marine 4	38	19 or 13+5	30	10/13	10, 2 ft.	10/13
6	49	19 or 13+5	30	10/13	10, 4 ft.	10/13
7 and 8	49	21	30	10/13	10, 4 ft.	10/13

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Best Practices for Sizing Air Conditioners and Heat Pumps

Best practices for sizing air conditioners and heat pumps include:

- Sizing to the manufacturers' performance data;
- Sizing the equipment for the total and latent load capacities;
- Determining the auxiliary heat balance point when sizing heat pumps; and
- Considering both the cooling and heating loads in different climates when sizing heat pumps.

ENERGY STAR Products – Average Energy Savings & Key Product Criteria

Product	Average Energy Savings	Key Product Criteria
Air Conditioner	25%	SEER ≥ 14 ; EER ≥ 11.5
Heat Pump	20%	SEER ≥ 14 ; EER ≥ 11.5; HSPF ≥ 8.2
Furnace	15%	AFUE ≥ 90% (About 15% more efficient than the minimum federal efficiency standards)

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Product	Average Energy Savings	Key Product Criteria
Windows	Savings vary by climate region (as defined by the ENERGY STAR windows program) and home characteristics	**Northern Climate Zone:** U-Factor ≤ 0.35; SHGC ≤ Any **North/Central Climate Zone:** U-Factor ≤ 0.40; SHGC ≤ 0.55 **South/Central Climate Zone:** U-Factor ≤ 0.40; SHGC ≤ 0.40; or U-Factor≤ 0.41; SHGC ≤ 0.36 U-Factor≤ 0.42; SHGC ≤ 0.31 U-Factor≤ 0.43; SHGC ≤ 0.24 **Southern Climate Zone:** U-Factor ≤ 0.65; SHGC ≤ 0.40; or U-Factor≤ 0.66; SHGC ≤ 0.39 U-Factor≤ 0.67; SHGC ≤ 0.39 U-Factor≤ 0.68; SHGC ≤ 0.38 U-Factor≤ 0.69; SHGC ≤ 0.37 U-Factor≤ 0.70; SHGC ≤ 0.37 U-Factor≤ 0.71; SHGC ≤ 0.36 U-Factor≤ 0.72; SHGC ≤ 0.35 U-Factor≤ 0.73; SHGC ≤ 0.35 U-Factor≤ 0.74; SHGC ≤ 0.34 U-Factor≤ 075; SHGC ≤ 0.33
Dish Washers	25%	Energy Factor ≥ 0.58: At least 25% more energy efficient than minimum Federal government standards
Clothes Washers	50%	Minimum Modified Energy Factor (MEF) of 1.42
Refrigerator	15%	At least 15% more energy efficient than the minimum Federal government standard (NAECA)
Thermostat	Savings depend on homeowner use	Shipped with a default energy saving program that is capable of maintaining two separate programs and four temperature settings or more for each day
Ventilating Fans	65%	**Range hoods (up to 500 cfm):** maximum allowable sound level of 2.0 sones; minimum efficacy level of 2.8 cfm/Watt **Bathroom fans (10 to 80 cfm):** maximum allowable sound level of 2.0 sones; minimum efficacy level of 1.4 cfm/Watt; minimum rated airflow at 0.25 static w.g. 60% of 0.1 static w.g. airflow **Bathroom fans (90 to 130 cfm):** maximum allowable sound level of 2.0 sones; minimum efficacy level of 2.8 cfm/Watt; minimum rated airflow at 0.25 w.g. 70% of 0.1 static w.g. airflow **Bathroom fans (140 to 500 cfm):** maximum allowable sound level of 3.0 sones; minimum efficacy level of 2.8 cfm/Watt; minimum rated airflow at 0.25 w.g. 70% of 0.1 static w.g. airflow Light sources must use pin-based fluorescent technology Warranty provided must be a minimum of 1 year
Lighting	66%	http://www.energystar.gov/index.cfm?c=lighting.pr_lighting
Ceiling Fans	Savings depend on homeowner use	http://www.energystar.gov/index.cfm?c=ceiling_fans.pr_ceiling_fans